A Component-oriented Process Failure Risk Analysis Method (Ver. 5) by Professor Paul G. Ranky, PhD, NJIT/MERC

Product Name and Appearance Before Process	Raw Material Prep Process	PFRA Study ID Number	1	**Process Code**	**This PFRA Study was Prepared By**
Name of Organization Responsible for the Process	Goff's Enterprises	Date of This Study (mm/dd/yy)	4/22/2012	**Engineering Release Date of Process**	**PFRA Team**
Other Organizations Involved in the Process		Orignal Date of This Study	1/20/2012	**Type of Product Processed**	**Responsible Organization/ Department**
Subcontractors, process Plants Effected	N/A	Revision Number	1	**Product Group Classifier**	**Comments**
Product Serial Number and Optional Image Map	N/A	Comments	None	**Engineering Release Date of the Product**	N/A

Process ID	Describe the Process for Each Process Step and Optionally Illustrate the State of the Device/ Part/ Subassembly/ Object AFTER the Process is Complete	Specify the Tool(s) Used in Each Process Step	Specify the Fixtures / Clamps Used in Each Process Step	List / Identify the Parts / Components Retrieved in Each Process Step	Process Time	Process Cost	Accumulated Process Cost	The PFRA Team Describes / Illustrates the Potential Process Failure Mode and the Effect; the Risk of Failure		Severity Rating	Detection Rating	Occurrence Rating
						53.00		Proc.ID	Failure Mode(s) and Effect(s)			
					[sec]	[USD]	[USD]			(1-10)	(1-10)	(1-10)
1	Manually Store and Retrieve Raw Material	Lift Truck, Human Hand and Eye	Human Hand	Baled Recycled Vinyl	120	1.77	1.77	ID 1.1	Lift Trucks Not working	10	1	5
2	Visually Inspect Raw Material	Human Hand and Eye	Human Hand	None	60	0.88	2.65	ID 2.1	Material Unusable	10	5	6
								ID 2.2	Metal and other Debris in the Stock	10	6	10
								ID 2.3	Organic Waste in Recycled Vinyl	7	8	10
3	Manually Load Material into Melting Tank	Electronic Hand Truck, Human Hand	Human Hand, Tanks, Heaters	Melted Vinyl	900	13.25	15.90	ID 3.1	High metal and debris content upsets the tanks	10	5	10
								ID 3.2	Failure of Heaters	10	1	2
								ID 3.3	Vinyl unusable	10	2	8
4	Pump Melted Vinyl Material to Head Box	None	Pumps, Piping, Valves, Head Box	None	300	4.42	20.32	ID 4.1	Blockage of Lines due to high debris content	10	2	8
								ID 4.2	Head Box clogged due to high debris content	10	1	8
								ID 4.3	Pumps and Valves Broken due to debris in lines	8	8	6

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10	**None**											
11												
12												
13	**RPN (Risk Priority Number)**	**Max. RPN**	**Tooling Factor**	**Clamping/ Fixturing Factor**	**Skill Factor**	**Any Other Factor You Define**	**Accumulated RPN**	**Risk Associated**	**The Effect of Each Process Step Failure Risk on Other Processes**	**The Effect of Each Process Step Failure Risk on Other Parts (I.e. components/ objects)**	Detection Mode	**Recommended Corrective Action(s)**
14												
15			**0.1-2,1=100%**	**0.1-2,1=100%**	**0.1-2,1=100%**	**0.1-2,1=100%**						
16	**50**	**50**	1.00	1.00	1.00	1.00	**50.00**	**Low**	No Effect	No effect	Human Inspection	Communicate material dfects to purchasing and suppliers
17	**0**											Service Automatic Lift system Regularly
18												
19	**300**	**600**	1.00	1.20	1.00	1.00	**720.00**	**HIGH**	Productoin slow down, financial loss	Harmful to Equipment, and production stoppage	Human Inspection	Check material more carefully
20	**600**								Production slow down, unusable material	Harmful to Equipment, and production stoppage	Human Inspection	Check material more carefully
21	**560**								Production slow down, unusable material	Harmful to Equipment, and production stoppage	Human Inspection	Check material more carefully
22	**500**	**500**	1.50	1.50	1.00	1.00	**1125.00**	**HIGH**	Productoin slow down, finanncial loss	Harmful to Equipment, and production stoppage	Human Inspection	Stop prep process and remove metal scrap
23	**20**								Productoin slow down, finanncial loss	Stoppage of forming and manufacturing line	Human Inspection	Check pilot light and gas supply
24	**160**								Productoin slow down, finanncial loss	Harmful to Equipment, and production stoppage	Human Inspection	Stop prep process and discard vinyl material and start over
25	**160**	**384**	1.00	1.50	1.00	1.00	**576.00**	**HIGH**	Productoin slow down, finanncial loss	production stoppage	Human Inspection	Clear blockage
26	**80**								Productoin slow down, finanncial loss	production stoppage	Human Inspection	Switch head box with Aux and clean clogged box
27	**384**								Productoin slow down, finanncial loss	Harmful to Equipment, and production stoppage	Human Inspection	Check pumps and valves and have back ups on hand
28												

	AA	AB	AC	AD	AE
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13	**Corrective Action(s) Taken and Date (mm/dd/yr)**				
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